Healthy Ageing – what is it, can we measure it & use it

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Reaching this potential requires a social transformation & good health

60 years

+20 years

80 years
At every age: global healthy life expectancy
Life expectancy minus Years lived with "disability" (YLDs)

IHME data, 2018
But not all people are living longer…

or

in good health

Sadana et al. 2016
1. Morbidity and Mortality
2. Healthy ageing
3. Baseline report, 2020
WE NEED TO BETTER DOCUMENT MORBIDITY AND MORTALITY
Top 10 causes of DALY (Percent of total DALYs) all ages, both sexes

1990 rank
1. Lower respiratory infection
2. Neonatal preterm birth
3. Diarrheal diseases
4. Ischemic heart disease
5. Cerebrovascular disease
6. Neonatal encephalopathy
7. Malaria
8. Measles
9. Congenital defects
10. COPD

2000 rank
1. Lower respiratory infection
2. Ischemic heart disease
3. Neonatal preterm birth
4. Cerebrovascular disease
5. Diarrheal diseases
6. Neonatal encephalopathy
7. Malaria
8. HIV/AIDS, other
9. Low back and neck pain
10. Road injuries

2010 rank
1. Ischemic heart disease
2. Lower respiratory infection
3. Cerebrovascular disease
4. Neonatal preterm birth
5. HIV/AIDS
6. Low back and neck pain
7. Diarrheal diseases
8. Neonatal encephalopathy
9. Malaria
10. Road injuries

2015 rank
1. Ischemic heart disease
2. Cerebrovascular disease
3. Lower respiratory infection
4. Neonatal preterm birth
5. Neonatal preterm birth
6. Diarrheal diseases
7. Sense organ diseases
8. Neonatal encephalopathy
9. Road injuries
10. HIV/AIDS, other

IHME data visualizer
Top 10 causes of DALY (Percent of total DALYs) adults aged 50-69, both sexes

1990 rank
1. Ischemic heart disease
2. Cerebrovascular disease
3. COPD
4. Low back and neck pain
5. Tuberculosis
6. Lung cancer
7. Diabetes
8. Sense organ diseases
9. Stomach cancer
10. Lower respiratory infection

2000 rank
1. Ischemic heart disease
2. Cerebrovascular disease
3. COPD
4. Low back and neck pain
5. Diabetes
6. Lung cancer
7. Sense organ diseases
8. Tuberculosis
9. Lower respiratory infection
10. Stomach cancer

2010 rank
1. Ischemic heart disease
2. Cerebrovascular disease
3. Low back and neck pain
4. Diabetes
5. COPD
6. Sense organ diseases
7. Lung cancer
8. Tuberculosis
9. Chronic kidney disease
10. Depressive disorders

2015 rank
1. Ischemic heart disease
2. Cerebrovascular disease
3. Low back and neck pain
4. Diabetes
5. COPD
6. Sense organ diseases
7. Lung cancer
8. Chronic kidney disease
9. Depressive disorders
10. Tuberculosis

Communicable, maternal, neonatal, and nutritional
Non-communicable diseases
Injuries
Top 10 causes of DALY (Percent of total DALYs) adults aged 70+, both sexes

IHME data visualizer
Counting Older Adults within Global Commitments

Madrid International Action Plan (MIPAA)

Goal 2 promotes participation, non-discrimination and social inclusion of older adults

Goal 3 - Health
3.4 By 2030, reduce by one third “premature mortality” from noncommunicable diseases through prevention and treatment and promote mental health and well-being

- cardiovascular disease, cancer, diabetes or chronic respiratory disease

[SDG 3.4.1] includes people between 30 and 70 years of age

SDG3 aims to ensure healthy lives and promote wellbeing for all, at all ages.

Leave no one behind requires countries to pay attention to health inequalities and act on health inequities.
Cardiovascular disease mortality rate, global, 10 sub-causes, 23 age groups, both sexes, 2017
2. Healthy ageing

- what is it, can we measure it?
- what can we do to optimize it?
Healthy Ageing – what matters to older adults

It is the process of developing and maintaining the functional ability that enables wellbeing in older age

A continuous phenomenon, an inclusive concept, not equivalent to disease-free, not simply age dependent

[World Health Organization]

Healthy Ageing - what is it?

Two Components

- **Functional ability** reflects the interaction between individuals’ intrinsic capacity and the environment they are living in.

- **Intrinsic capacity** is determined by many factors, including underlying physiological and psychological changes, health-related behaviors and the presence or absence of disease.
Healthy Ageing trajectories - continuous

High and stable capacity | Declining capacity | Significant loss of capacity

Functional ability

Prevent care dependence; yet provide support if care dependent

World Report on Ageing and Health 2015
Significant loss
Declines
High and stable

Health System
Long term care
Environment

WHO 2015
Care dependence, not dependency ratio

Measured using Activities of Daily Living (ADLs) which capture any difficulty with six activities, due to declines in intrinsic capacity (physical, cognitive, emotional or memory etc.):

- Bathing
- Dressing
- Eating
- Getting in/out of bed
- Using the toilet
- Walking across a room

Three different outcomes:
- Prevalence – the rate of people having at least one ADL difficulty at any one point in time
- Incidence – the rate at which someone with no difficulties develops at least one
- Short term and or reversible
CAN WE
CLARIFY AND
OPERATIONALIZE
THE CONCEPTS
Compilation of the different domains used to describe ageing in 10 recently published studies

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STUDIES USE DIFFERENT, ARBITRARY WAYS TO DESCRIBE AGEING, DISEASES, CONDITIONS, CAPACITIES, ABILITIES, FUNCTIONING, QUALITY OF LIFE, WELL BEING . . .

Michel & Sadana, 2017
WHO Family of International Classifications

Diseases

Single or few codes

Code M05  Seropositive Rheumatoid arthritis

Health

Comprehensive profile

<table>
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<tr>
<th>ICF categories</th>
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<td>D330 Carrying out daily routine</td>
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<td>D400 Handling stress and other psychological demands</td>
<td>4* 3* 2* 1* 0* 1 2 3 4</td>
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<td>D5302 Part-time employment</td>
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<td>D520 Recreation and leisure</td>
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<td>E115 Assistive products... for personal use in daily living</td>
<td>4* 3* 2* 1* 0* 1 2 3 4</td>
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<td>E120 Assistive products...for personal mobility</td>
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<td>E340 Personal care providers</td>
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<td>E310 Immediate family</td>
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## Healthy ageing – unpack it

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<th>Functional Ability</th>
<th>Environment</th>
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<td>Cognitive</td>
<td>Learning and applying knowledge</td>
<td>Products and technology</td>
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<td>Psychological</td>
<td>Communication</td>
<td>Natural and built environment</td>
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<td>Sensory</td>
<td>Mobility</td>
<td>Support and relationships</td>
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<td>Neuromusculoskeletal</td>
<td>Self-care</td>
<td>Attitudes</td>
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<td>Voice and speech</td>
<td>Domestic life</td>
<td>Services, systems and policies</td>
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<td>Cardiovascular</td>
<td>Interpersonal interactions and relationships</td>
<td>5 potential sub domains</td>
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<td>Haematological</td>
<td>Major life areas</td>
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<td>Community, social and civic life</td>
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<td>Skin, hair and nails</td>
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15 potential sub domains

### Functional Ability

- Learning and applying knowledge
- Communication
- Mobility
- Self-care
- Domestic life
- Interpersonal interactions and relationships
- Major life areas
- Community, social and civic life

8 Potential sub domains
Intrinsic capacity: sub-domains and relationships

USA, Health & Retirement Study 2016

Normative/Concept driven – 10 domains

Empirical/Data-driven – 11 domains

Cardiovascular
Cognitive
Genitourinary
Hematological
Immune
Metabolism
Neuromusculoskeletal
Psychological
Respiratory
Sensory
## Healthy ageing – unpack it

### Intrinsic Capacity
- Cognitive
- Psychological
- Sensory
- Neuromusculoskeletal
- Voice and speech
- Cardiovascular
- Haematological
- Respiratory
- Immunological
- Digestive
- Metabolic
- Endocrine
- Genitourinary
- Reproductive
- Skin, hair and nails

### Functional Ability
- Learning and applying knowledge
- Communication
- Mobility
- Self-care
- Domestic life
- Interpersonal interactions and relationships
- Major life areas
- Community, social and civic life

### Environment
- Products and technology
- Natural and built environment
- Support and relationships
- Attitudes
- Services, systems and policies
Mobility, a sub-domain of Functional Ability
CAN WE MEASURE IT
Intrinsic capacity, cross sectional, by age, 6 countries, WHO SAGE

Source: World Report on Ageing and Health

Data Source: SAGE wave 1, cross sectional data, 6 countries, 2007-2010
Intrinsic capacity, India and Russia, men and women, age 50 plus, by household wealth

Data Source: SAGE wave 1, cross sectional data, 2 countries

Sadana et al. forthcoming
Distribution of intrinsic capacity score
(WHO world population standard, 50+, both sexes)

Source database: SAGE, WHO, wave 1, cross sectional data
WHAT DOES THIS MEAN
Intrinsic capacity score distribution for ages 50+, Russia

- Private sector workers, men: 62.4
- Private sector workers, women: 57.6
- Informal sector workers, men: 54.8
- Informal sector workers, women: 48.1
- 90+, lowest wealth quintile, least educated: 35.8
- 50-54yrs, highest wealth quintile, most educated: 66.2

Sadana et al. forthcoming
Intrinsic capacity score distribution for ages 50+, India

Private sector workers, women 45.4
Informal sector workers, women, 42.5
Informal sector workers, men, 48.2
Private sector workers, men 54.1
90+, lowest wealth quintile, least educated, 26.0
50-54yrs, highest wealth quintile, most educated 62.2

Sadana et al. forthcoming
Crude distribution of functional ability score men and women 50+, India

Shift the distribution

LASI pilot, 2015
Crude distribution of functional ability score, men and women, 50+

18 European countries

SHARE, 2015
Intrinsic Capacity Trajectories:
cohort effect, older adults 50+, England

ELSA longitudinal survey, 2017
Amuthavalli Thiyagarajan et al. forthcoming
Cohort effect on cognitive capacity (sub domain), adults 50+, by childhood socioeconomic status

Solid line = high childhood socio economic position
Dash line = low childhood socio economic position

ELSA, 2017  Amuthavalli Thiyagarajan et al. forthcoming
Strategic objective 5: Improving measurement, monitoring and research on Healthy Ageing

Documenting relationship between Healthy Ageing domains and subdomains from 50+ national surveys
ACCOUNTABILITY IS ONE WAY TO BRIDGE RESEARCH TO POLICY TO ACTION TO IMPACT
Decade of Healthy Ageing 2020-2030

New WHO Baseline report on Healthy Ageing

2002

2015

2016

2017

2018

2019

2020

2030

WORLD REPORT ON AGEING AND HEALTH
Towards measuring Healthy Ageing
Integrated care for older people
The Global Network for Age-Friendly Cities and Communities
Global strategy and action plan on ageing and health (2015 - 2020)
Mid-term progress
TCG Ageing

Second World Assembly on Ageing 2002
madrid

Global strategy and action plan on ageing and health (2015 - 2020)

Decade of Healthy Ageing 2020-2030
3. Base Line Report: Where we are – 2020

Global baseline – levels and distribution - Intrinsic capacity, functional ability, enabling environments and other important indicators such as care dependence, healthy life expectancy

- new analysis of existing nationally representative data
- data from new nationally representative surveys
- best estimates for countries without data, and plan for strengthening national information

Where we want to be – by 2030

Goal alignment, targets and Indicators – projections towards potential targets
Scenarios to support national planning & investments (informed by projections)

How are we going to get there

What can be done (reflecting systematic reviews, norms in key areas, country case studies & experiences evaluated as good practice) in different contexts
GLOBAL STATUS 2018 - 194 countries

Cross-sectional
Only 54

Longitudinal
Only 35

10 indicators full results: www.who.int/ageing/commit-action/measuring-progress/en/
A ‘Decade of Healthy Aging’: Are you ready?

THANK YOU

Email: sadanar@who.int  Follow on Twitter: @RituSadana